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A Revised Checklist of the Snakes of Kansas

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SINCE the publication of Branson's "Snakes of Kansas,"* the Biological Survey of the University of Kansas has collected a large number of snakes, among which are species not hitherto recorded from Kansas, and others that have been reported on doubtful authority. In order to bring our knowledge of the ophidian fauna up to date I am presenting here a list of the species known with certainty from the state, with notes on their distribution.[1] I also comment on the species excluded from the state list.

Due to recent research in the taxonomy of the snakes, and the revision of several genera, the nomenclature used in Branson's paper is so very much out of date that I am showing in a footnote the present equivalents for the names in his list.[2]

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* Bull. Univ. Kansas, vol. IV (Science Bulletin, vol. II (1904), pp. 353-430, June.

1. In the following annotated list the county records are based on specimens in the Kansas University collections, except in one or two cases where the snakes have been recently reported from Riley by Burt (1927) and from Franklin by Gloyd (1928). Old and doubtful records are excluded.

2. NOTE:
Pityophis catenifer sayi Schlegel = *Pituophis sayi sayi* (Schlegel).
Eutænia proxima Say = *Thamnophis saurius proximus* (Say).
Eutænia radix Baird and Girard = *Thamnophis radix radix* (Baird and Girard).
Eutænia elegans vagrans Baird and Girard = *Thamnophis ordinoides vagrans* (Baird and Girard).
Eutænia sirtalis parietalis Say = *Thamnophis sirtalis parietalis* (Say).
Eutænia sirtalis sirtalis Linnaeus = *Thamnophis sirtalis sirtalis* (Linné).
Tropidoclonium lineatum Cope = *Tropidoclonion lineatum* (Hallowell).
Cyclophis æstivus Linnaeus = *Opheodrys æstivus* (Linné).
Heterodon playtyrhinus Latreille = *Heterodon contortrix* (Linné).
Heterodon nasicus Baird and Girard = *Heterodon nasicus* Baird and Girard.
Natrix grahami Baird and Girard = *Natrix grahamii* (Baird and Girard).
Natrix rhombifera Hallowell = *Natrix rhombifera* (Hallowell).
Natrix fasciata sipedon Linnæus = *Natrix sipedon* (Linné).
Natrix fasciata erythrogaster Shaw = *Natrix erythrogaster trausversa* Hallowell.
Coluber spiloides Duméril and Bibron = ? *Elaphe obsoleta obsoleta* (Say) Young.
Coluber obsoletus obsoletus Say = *Elaphe obsoleta obsoleta* (Say).
Coluber vulpinus Baird and Girard = *Elaphe vulpina* (Baird and Girard).
Coluber emoryi Baird and Girard = *Elaphe læta* (Baird and Girard).
Storeria occipitomaculata Baird and Girard = *Storeria occipto-maculata* (Storer).
Storeria dekayi Holbrook = *Storeria dekayi* (Holbrook).
Ophibolus calligaster Say = *Lampropeltis calligaster* (Harlan).
Ophibolus gentulus sayi Holbrook = *Lampropeltis getulus holbrooki* (Stejneger).
Ophibolus doliatus triangulus Cope = *Lampropeltis triangulum triangulum* (Lacépède).

1. *Carphophis amœna vermis* (Kennicott). Worm snake.

This species is found commonly under rocks on hillsides in the eastern part of the state. (Leavenworth, Jefferson, Douglas, Osage, Franklin, Anderson, Montgomery, Riley, Neosho, and Crawford counties.)

2. *Diadophis punctatus arnyi* (Kennicott). Ring-necked snake.

Probably more specimens of this species have been found by collectors than any other in Kansas. It is surprisingly common in habitats occupied by the worm snake during the latter part of March and April. It is highly probable that the species is confined to the eastern part of the state, although one specimen in the University collection purports to come from Gove county. I strongly suspect that this locality is erroneous. (Doniphan, Riley, Jefferson, Leavenworth, Wyandotte, Douglas, Osage, Franklin, Anderson, Neosho, Montgomery and Cowley counties).

3. *Heterodon contortrix* (Linné). Spreading adder.

Locality records show the presence of this species throughout the state. Nowhere does it appear to be common. (Wyandotte, Douglas, Riley, Franklin, Cowley, Ellsworth, Stafford, Sumner, Pratt, and Morton counties.)

4. *Heterodon nasicus* Baird and Girard. Hog-nosed snake.

All the specimens that I have examined have been obtained in the western half of the state. (Morton, Rawlins, Lane, Graham, Trego, Riley, Washington, Russell and Stafford counties.)

5. *Opheodrys æstivus* (Linné). Rough green snake.

Specimens of this species in the University collections have all been obtained in the southeastern part of the state. (Franklin, Miami, Anderson, Linn, Bourbon, Labette, Montgomery and Cowley counties.)

Ophibolus doliatus doliatus Linnæus = *Lampropeltis triangulum syspila* (Cope).
Ophibolus doliatus gentilis Baird and Girard = *Lampropeltis triangulum gentilis* (Baird and Girard).
Rhinochilus lecontei Baird and Girard = *Rhinocheilus lecontei* Baird and Girard.
Carphophis amœnus Say = *Carphophis amœna vermis* (Kennicott).
Diadaphis regalis Baird and Girard = *Diadophis* sp.?
Diadophis punctatus Linnaeus = *Diadophis punctatus arnyi* (Kennicott).
Liopeltis vernalis DeKay = *Liopeltis vernalis* (Harlan).
Zamenis flagellum flagellum Shaw = *Masticophis flagellum flavigularis* (Hallowell).
Zamenis constrictor Linnæus = *Coluber constrictor flaviventris* (Say).
Tantilla gracilis Baird and Girard = *Tantilla gracilis* Baird and Girard.
Tantilla negriceps Kennicott = *Tantilla nigriceps* Kennicott.
Chionactis episcopus isozonus Cope = *Sonora semiannulata* Baird and Girard.
Ancistrodon contortrix Linnæus = *Agkistrodon mokasen* Beauvois.
Ancistrodon piscivorous Lacepede = *Agkistrodon piscivorous* (Lacépède).
Sistrurus catenatus Garman = *Sistrurus catenatus catenatus* (Rafinesque).
Crotalus horridus Linnæus = *Crotalus horridus* Linné.
Crotalus confluentus Say = *Crotalus confluentus confluentus* Say.

6. *Liopeltis vernalis* (Harlan). Smooth green snake.

This snake appears to be rare in the state. H. K. Gloyd (1928) reports a specimen collected in Franklin county. The specimen is now in the collection of Ottawa University, Ottawa, Kan. The locality data are undoubtedly authentic. (Franklin county.)

7. *Coluber constrictor flaviventris* (Say). Blue racer.

The blue racer is one of the commonest snakes in Kansas and appears to be found with equal frequency in all parts of the state. (Bourbon, Cherokee, Labette, Anderson, Franklin, Douglas, Leavenworth, Jefferson, Wyandotte, Coffey, Woodson, Greenwood, Elk, Chautauqua, Marion, Stafford, Pratt, Barber, Clark, Meade, Lane, Gove, Trego, Graham, Rawlins, Wallace, Riley, Hamilton and Morton counties.)

8. *Masticophis flagellum flagellum* (Shaw). Coachwhip.

The species referred to this name in Branson's paper (*loc. cit.*) is now recognized under the subspecific name *flavigularis*, a form confined to the western half of the state. He mentions a specimen occurring in Douglas county in the eastern part of the state, but makes no mention of its differing from the western form. This specimen is no longer extant.

There are two specimens of this species now in the collections of the University of Kansas, one collected by Wayne B. Whitlow who obtained it at Wayside, Montgomery county, August, 1924. The second specimen was caught in July, 1926, by T. E. White at Sycamore, Montgomery county. Farmers in Montgomery and Cherokee counties state that the species is not rare. They distinguish this dark snake from the pilot black snake by its habit of moving rapidly when disturbed. (Montgomery county.)

9. *Masticophis flagellum flavigularis* (Hallowell). Western coachwhip.

This species is not uncommon throughout the western half of Kansas. It is usually found in open prairie country and along draws. (Morton, Barber, Pratt, Graham, Trego, Gove, Lane, Logan and Wallace counties.)

10. *Elaphe læta* (Baird and Girard). Rat snake.

This form so frequently confused with *Lampropeltis calligaster* is found only in the western third of the state. Most of the specimens collected by the Biological Survey have been taken under rocks

along hillsides in early spring. It does not appear to be common. (Shawnee, Osage, Douglas, Riley, Franklin, Anderson, Woodson, Greenwood and Labette counties.)

11. *Elaphe obsoleta obsoleta* (Say). Pilot black snake.

Timbered areas along streams during the summer, and rocky hillsides in the early spring have yielded most of the specimens of the pilot black snake. Among Kansas snakes this species is exceeded in length by only the bull snake. It is confined to the eastern third of the state. (Doniphan, Leavenworth, Douglas, Franklin, Osage, Linn, Anderson, Woodson, Bourbon, Cherokee, Elk and Riley counties.)

12. *Arizona elegans elegans* (Kennicott). Faded snake.

Mr. C. D. Bunker, Curator of Birds and Mammals of the University museum collected the first specimen of this species taken in the state. It was captured in the daytime crawling across the road near Ashland, Clark county. The species is strictly nocturnal and the finding of the species in the daytime is very unusual. Henry Burt, a student in the University of Kansas, collected two specimens at night in Morton county while trapping small mammals. A fourth specimen was collected in the summer of 1927 in Stafford county by the Biological Survey party. (Morton, Stafford and Clark counties.)

13. *Pituophis sayi* (Schlegel). Bull snake.

The largest of our Kansas snakes has a state-wide distribution. Specimens appear to be more numerous in the open prairie country. (Douglas, Franklin, Anderson, Allen, Montgomery, Osage, Riley, Cloud, Republic, Pratt, Stafford, Clark, Trego, Gove, Lane, Washington, Rawlins and Morton counties.)

14. *Lampropeltis calligaster* (Harlan). King snake.

This common snake appears to be confined to the eastern third of the state. (Shawnee, Osage, Douglas, Franklin, Anderson, Woodson, Washington, Greenwood, Labette, Crawford and Riley counties.)

15. *Lampropeltis triangulum syspila* (Cope). Painted king snake.

This brightly colored snake due to its secretive habits is rare in the collections made in Kansas. It is somewhat difficult to certainly differentiate this form from the subspecies *L. triangulum gentilis*. (Doniphan, Douglas, Osage, Coffey, Franklin, Anderson, Linn, Labette and Riley counties. Specimens doubtfully referable to this form are known from Republic, Russell and Rice counties.)

16. *Lampropeltis triangulum gentilis* (Baird and Girard). Prairie painted king snake.

I have referred to this species specimens from the western part of the state. These are very much faded and the red is very indistinct in life. The specimens from Morton county were taken deeply buried under rocks. (Morton and Wallace counties.)

17. *Lampropeltis getulus holbrooki* (Stejneger). Salt-and-Pepper king snake.

This distinct black and yellow snake ranges over the eastern two-thirds of the state. (Leavenworth, Douglas, Osage, Coffey, Franklin, Anderson, Linn, Labette, Riley, Russel, Rice and Pratt counties.)

18. *Rhinocheilus lecontei* Baird and Girard. Leconte's snake.

The nocturnal habits of this species is probably responsible for its remaining rare in collections. So far as I am aware only four specimens have been collected in the state. During the summer of 1928 a specimen of this species was caught near Alva, Oklahoma, only some 14 miles from the Kansas state line by Alonzo Wilson. This is the only recent collection of the snake in or near Kansas. The brilliant black, red and gold coloration of the form is equalled by no other snake except that of the painted king snake. (Clark, Barber and Finney counties.)

19. *Sonora semiannulata* Baird and Girard. Banded ground snake.

Specimens of this diminutive species have been taken only in the southeastern corner of the state where they appear to be common. Three color phases are present, the red and black banded forms being rarest. (Montgomery and Cherokee counties.)

20. *Natrix grahamii* (Baird and Girard). Graham's water snake.

This species is plentiful along streams and ponds in the eastern part of the state. A single specimen was captured at Pratt, Kansas, in 1928. This is, I believe, the most western record for the state. (Douglas, Franklin, Miami, Anderson, Linn, Woodson, Pratt, Wilson, Riley and Montgomery counties.)

21. *Natrix sipedon* (Linné). Common water snake.

This is the commonest water snake in collections. It probably occurs throughout the state since the University collection contains a specimen from Colorado. However, no specimens are in the collections from the western fourth of the state. (Cherokee, Crawford,

Linn, Anderson, Franklin, Douglas, Doniphan, Osage, Woodson, Riley, Chase, Greenwood, Elk, Cowley, Butler, Marion, Pratt, Stafford, Rooks and Trego counties.)

22. *Natrix erythrogaster transversa* (Hallowell). Yellow-bellied water snake.

The form is unquestionably specifically distinct from *Natrix sipedon*, and has practically the same range throughout the state. A few specimens appear to be uniformly colored on the ventral surface. (Linn, Bourbon, Cherokee, Doniphan, Douglas, Franklin, Anderson, Allen, Labette, Montgomery, Woodson, Osage, Greenwood, Stafford, Pratt and Clark counties.)

23. *Natrix rhombifera* (Hallowell). Diamond backed water snake.

This form reaches a greater size than any of the other water snakes in Kansas. The largest specimens are usually encountered about lakes and marshes. (Linn, Miami, Douglas, Franklin, Anderson, Cowley, Montgomery, Osage, Woodson and Coffey counties.)

24. *Storeria occipito-maculata* (Storer). Red-bellied Dekay snake.

Only a few specimens of this species have reached the University collections. It seems to be confined to the extreme eastern part of the state. Gloyd (1928) reports six specimens from Franklin county. (Douglas, Franklin, Anderson and Cherokee counties.)

25. *Storeria dekayi* (Holbrook). DeKay's snake.

This species is distinctly more common than the red-bellied species. It appears to frequent wet localities, where earthworms are plentiful. (Doniphan, Leavenworth, Douglas, Franklin, Anderson, Cherokee, Montgomery, Chautauqua and Riley counties.)

26. *Virginia valeriæ elegans* (Kennicott). Virginia brown snake.

The first specimen of this species to be taken in the state was collected by me in Anderson county, in August, 1910. H. K. Gloyd collected two specimens in Franklin county in 1926. Students in my class in herpetology obtained four specimens of this snake in Jefferson county in the spring of 1929. (Franklin, Anderson, Douglas and Jefferson counties.)

27. *Tropidoclonion lineatum* (Hallowell). Lined snake.

This shy, secretive form appears to be rather rare or at least difficult to find. It is confined to the eastern third of the state. (Jeffer-

son, Leavenworth, Douglas, Osage, Franklin, Anderson, Cowley, Dickerson and Riley counties.)

28. *Thamnophis marcianus* (Baird and Girard). Marcy's snake.

This species was first reported from Kansas in 1878 by Miss Mozley with the following notation: *"E(utœnia)*. Marcinana (*sic*) B. & G. Douglas county." This specimen is no longer present in the Kansas University collections or if present has received other designation. This record should be disregarded. It also appears in Cragin's (1879) list with the following notation: *"Eutœnia marciana* B. & G.; Marcy's Garter Snake. Ft. Hays (Garman). Douglas Co., (Mozley)."

I collected two specimens of this species, August 19, 1926, at a small creek fed by springs, which empties into the Cimarron river in Morton county. Another specimen was obtained in Meade county in 1928 by Albert Lunceford, Jr. This form appears to maintain its identity and does not merge with *Thamnophis radix radix* which occurs in the same immediate locality. (Morton and Meade counties.)

29. *Thamnophis sauritus proximus* (Say). Western ribbon snake.

This species is rarely found away from the immediate vicinity of water. It prefers ponds and lakes to running streams. (Doniphan, Douglas, Osage, Franklin, Miami, Montgomery, Riley, Stafford, Pratt, Barber, Harper, Washington, Graham, Clark and Meade counties.)

30. *Thamnophis radix radix* (Baird and Girard). Plains garter snake.

This form, which is especially common in western Kansas, also occurs throughout the eastern part of the state. The specimens examined from the east differ in some respects as regards lateral and ventral markings, and do not appear to reach as large a size as the western examples do. (Douglas, Franklin, Coffey, Labette, Riley, Republic, Cloud, Osborne, Russell, Stafford, Rice, Harper, Rooks, Trego, Gove, Lane, Meade, Rawlins, Wallace and Morton counties.)

31. *Thamnophis sirtalis parietalis* (Say). Red-barred common garter snake.

This is the common garter snake of the eastern part of the state. (Atchison, Jefferson, Douglas, Osage, Franklin, Coffey, Anderson, Linn, Woodson, Montgomery, Riley, Cloud, Greenwood, Cowley, Sumner, Pratt, Comanchee, Meade and Hamilton counties.)

32. *Tantilla gracilis* Baird and Girard. Graceful tantilla.

This species is relatively common. Its small size and inconspicuous coloring, however, causes it to escape observation unless encountered under a rock. (Riley, Wabaunsee, Leavenworth, Jefferson, Douglas, Montgomery and Sumner counties.)

33. *Tantilla nigriceps* Kennicott. Black-headed tantilla.

The only specimens of this species that have undoubtedly authentic locality data, in the University collections, are from Morton county. It has been reported from a number of counties, even as far east as Geary and Riley counties by Branson. It may overlap the territory occupied by *Tantilla gracilis*. (Morton county.)

34. *Agkistrodon mokasen* Beauvois. Copperhead.

The copperhead is common in the eastern part of the state, but is either extremely rare or entirely wanting in the western third of the state. (Doniphan, Leavenworth, Jefferson, Douglas, Anderson, Franklin, Montgomery, Cherokee, Osage, Bourbon, Labette and Riley counties.)

35. *Sistrurus catenatus catenatus* (Rafinesque). Pigmy rattlesnake.

This species is rare in eastern Kansas but is relatively plentiful throughout the central part of the state. (Franklin, Osage, Coffey, Greenwood, Butler, Dickinson, Stafford and Pratt counties.)

36. *Crotalus confluentus confluentus* (Say). Prairie rattler.

This form has been reported as far east as Riley county. It is probably wanting in the eastern part of the state. (Republic, Ellsworth, Barber, Trego, Graham, Gove, Sherman, Wallace and Morton counties.)

37. *Crotalus horridus* (Linné). Timber rattlesnake.

This form is far from rare in certain localities in the eastern part of the state. Gloyd (1928) reports finding large numbers in Franklin county. There are many specimens in the University collections from Douglas county. (Doniphan, Leavenworth, Jefferson, Wyandotte, Franklin, Douglas, Anderson and Riley counties.)

SPECIES EXCLUDED FROM THE STATE LIST.

Several species reported in Branson's paper have either not been found or their place on the list is not above question. I believe it

wiser to question some of these older records than to include incorrectly species that are not positively known from the state.

1. *Eutænia elegans vagrans* (Baird and Girard).

This species of Thamnophis is reported from the western part of the state. Branson says: "The snake is quite rare in the western part of Kansas. None have been reported in the eastern part." Cragin states: "*Eutænia vagrans* B. & G. Wandering garter snake. Ft. Riley (Nolan). In the Cambridge Museum of Comparative Zoölogy, from Kansas (Garman). I collected a specimen of *Thamnophis ordonoides elegans* (Baird and Girard) in southern Colorado in 1928 at a distance of about 100 miles from the Kansas line. It is not improbable that the species will be discovered or rediscovered within the limits of the state."

2. *Eutænia sirtalis sirtalis* (Linné).

Branson reports this species as common in all parts of the state but less numerous than *E. sirtalis parietalis*. He reports specimens from Douglas, Lyon, Mitchell, Wallace and Shawnee counties. One specimen identified as this species in the National Museum purports to come from Woodson county. None of Branson's specimens are in the collection at the present time.

3. *Coluber spiloides* Dumeril and Bibron.

It is probable that a young specimen of *Elaphe obsoleta obsoleta* was referred to this species.

4. *Coluber vulpinus* (Baird and Girard).

The fox snake is included on insufficient evidence, and must be regarded as of very doubtful occurrence in the state.

5. *Diadophis regalis* Baird and Girard.

Burt (1927) is of the opinion that this is a synonym of *Diadophis punctatus arnyi*, which does occur in Riley county. This is the locality from which Branson's specimens are reputed to come.

6. *Ophibolus doliatus triangulus* Cope.

Blanchard (1921) in his revision of the King snakes believes that *Lampropeltis triangulum triangulum* is limited in its western distribution by the Mississippi. Branson claims to have collected the species in Douglas county, and examined a specimen from Franklin county. A specimen, No. 12,524 U. S. National Museum, purports to come from Ft. Scott, Kan. Until future collections reveal the pres-

ence of this form in the state I believe it well to omit it from Kansas lists.

7. *Agkistrodon piscivorous* Lacepede.

Branson lists this form as probably occurring in Kansas. To this date no specimen of the poisonous water moccasin has been taken by any collector in the limits of the state.

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